Scene2d.ui

OVERVIEW

- scene2d is libgdx's 2D scene graph.
- At its core, it provides basic 2D scene graph functionality: actors, groups, drawing, events, and actions.
- For building UIs, the scene2d.ui package provides common UI widgets and other classes built on top of scene2d.

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Stage Setup

 Most scene2d.ui layouts has the size of the stage. All other widgets and nested layouts are placed in this principal layout.

```
Stage stage = new Stage();
Gdx.input.setInputProcessor(stage);

//Container
Table table = new Table();
table.setFillParent(true);
stage.addActor(table);

// Add widgets to the table here.
```

Skin

- You will need: uiskin.png, uiskin.atlas, uiskin.json, and default.fnt.
- This enables you to quickly get started using scene2d.ui and replace the skin assets later.
- It can be configured using JSON or with code

```
TextureRegion upRegion = ...
TextureRegion downRegion = ...
BitmapFont buttonFont = ...
TextButton button1;

//Code
TextButtonStyle style = new TextButtonStyle();
style.up = new TextureRegionDrawable(upRegion);
style.down = new TextureRegionDrawable(downRegion);
style.font = buttonFont;
button1 = new TextButton("Button 1", style);

//JSON
Skin skin = skin = new Skin(Gdx.files.internal("json file"));
button1 = new TextButton("Button 1", skin);
```

Change Events

- Most widgets fire a ChangeEvent when something changes.
- This is a generic event, what actually changed depends on each widget. Eg, for a button the change is that the button was pressed, for a slider the change is the slider position

```
actor.addListener(new ChangeListener() {
    public void changed (ChangeEvent event, Actor actor) {
        System.out.println("Changed!");
    }
});
```

Rotation And Scale

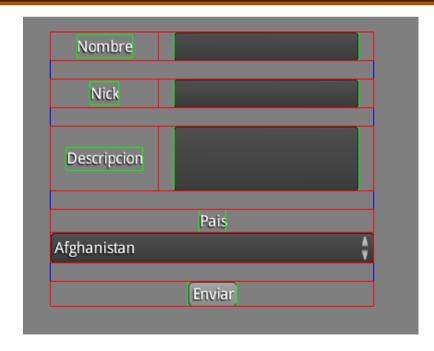
- Scene2d.ui groups have transform set to false by default. Rotation and scale is ignored when the group's transform is disabled.
- Transforms can be enabled as needed, with some caveats.
- Not all widgets support all features when rotation or scaling

```
TextButton button = new TextButton("Text Button", skin);
Container wrapper = new Container(button);
wrapper.setTransform(true);
wrapper.setOrigin(wrapper.getPrefWidth() / 2, wrapper.getPrefHeight() /
2);
wrapper.setRotation(45);
wrapper.setScalex(1.5f);
```

LAYOUT WIDGETS

Table

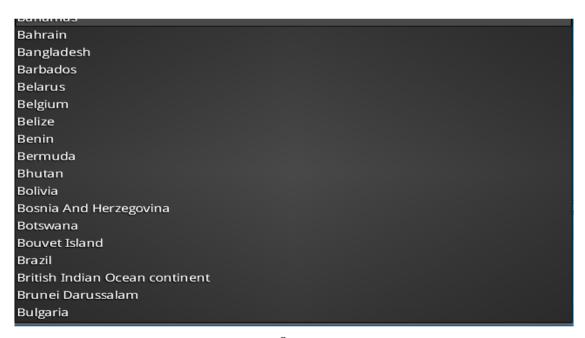
- Tables are the most used layout
- The Table class (code) sizes and positions its children using a logical table, similar to HTML tables.
- Table-based layouts don't rely on absolute positioning and therefore automatically adjust to different widget sizes and screen resolutions.



LAYOUT WIDGETS

ScrollPane

- Scrolls a child widget using scrollbars and/or mouse or touch dragging.
- Scrolling is automatically enabled when the widget is larger than the scroll pane.
- If the widget is smaller than the scroll pane in one direction, it is sized to the scroll pane in that direction.



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WIDGETS

Label

Label displays text using a bitmap font and a color.



WIDGETS

TextButton

- TextButton (code) extends Button and contains a label.
- TextButton adds to Button a bitmap font and a colors for the text in the up, down, and checked states.

